

SHORELINE CITY COUNCIL STUDY SESSION

Tuesday, September 2, 2008 6:30 p.m.

Shoreline Conference Center Highlander Room

> Page **Estimated Time**

1. **CALL TO ORDER** 6:30

- 2. FLAG SALUTE/ROLL CALL
- 3. CITY MANAGER'S REPORT AND FUTURE AGENDAS
- 4. **COUNCIL REPORTS**

5. GENERAL PUBLIC COMMENT

6:40

This is an opportunity for the public to address the Council on topics other than those listed on the agenda and which are not of a quasi-judicial nature. Speakers may address Council for up to three minutes, depending on the number of people wishing to speak. If more than 15 people are signed up to speak each speaker will be allocated 2 minutes. When representing the official position of a State registered non-profit organization or agency or a City-recognized organization, a speaker will be given 5 minutes and it will be recorded as the official position of that organization. Each organization shall have only one, five-minute presentation. The total public comment period under Agenda Item 5 will be no more than 30 minutes. Individuals will be required to sign up prior to the start of the Public Comment period and will be called upon to speak generally in the order in which they have signed. If time is available, the Presiding Officer may call for additional unsigned speakers.

6. STUDY ITEMS

ADJC	DURNMENT		9:00
(b)	Thornton Creek Basin Flood Plain Mapping	<u>19</u>	8:00
(a)	2008 Master Plan Area Criteria Discussion	<u>l</u>	6:55

7. ADJOURNMENT

The Council meeting is wheelchair accessible. Any person requiring a disability accommodation should contact the City Clerk's Office at 801-2231 in advance for more information. For TTY service, call 546-0457. For up-to-date information on future agendas, call 801-2236 or see the web page at www.cityofshoreline.com. Council meetings are shown on Comcast Cable Services Channel 21 Tuesdays at 12 noon and 8 p.m., and Wednesday through Sunday at 6 a.m., 12 noon p.m.Online Council meetings also be viewed can on the City's Web site http://cityofshoreline.com/cityhall/citycouncil/index.cfm.

Council Meeting Date: September 2, 2008 Agenda Item: 6(a)

CITY COUNCIL AGENDA ITEM

CITY OF SHORELINE, WASHINGTON

AGENDA TITLE: Discuss Proposed Criteria for Approving Master Planned

Area Permits in relation to the 2008 Annual Comprehensive

Plan and Associated Development Code Amendments

DEPARTMENT:

Planning and Development Services

PRESENTED BY:

Joseph W. Tovar, FAICP Director of Planning and

Development Services; Rachael Markle, Project Manager

Asst. Director of Planning and Development Services

On July 14th, when the Council last discussed the proposed amendments to the Comprehensive Plan and the Development Code to solidify the process for Master Planning, members of the Council expressed an interest in proposing amendments to the draft decision criteria for approval of a Master Planned Area permit.

Councilmember Eggen submitted comments that can be found in Attachment A. Additional comments were provided by the Hillwood Neighborhood Association located in Attachment B.

RECOMMENDATION

No action is required. Please provide staff with direction on:

- 1. The final set of draft criteria for approving a Master Plan Area permit:
- 2. Whether or not Master Plan Area permits can include new uses in addition to existing uses; and
- 3. The request for changes proposed by the Hillwood Neighborhood Association and the staff responses to those requests.

Approved By: City Manager ____ City Attorney ____

DISCUSSION

This report is organized as follows:

- 1. Each criterion 1-9 is shown in its own table.
- 2. Each table contains:
 - a. The version of the criterion presented to Council in the July 14th staff report;
 - b. The version of the criterion as edited by Councilmember Eggen;
 - c. The version of the criterion as edited by the Hillwood Neighborhood Association;
 - d. The new staff recommended version of the criterion; and
 - e. Discussion of staff rationale for new staff recommended criterion.

Master Plan Area Decision Criteria Discussion Table

Version of criteria	Proposed Criteria Language
Criterion #1:	
07/14/08 PC & Staff	The project is designated as either Institutional/Campus or Essential Public Facilities in the Comprehensive Plan and is consistent with goals and polices of the Comprehensive Plan relating to these areas.
Councilmember Eggen	No changes proposed to this criterion.
Hillwood Neighborhood	The project is designated as either Institutional/Campus or Essential Public Facilities in the Comprehensive Plan and is consistent with goals and polices of the Comprehensive Plan relating to these areas.
09/02/08 Revised Version	The project is designated as either Institutional/Campus or Essential Public Facilities in the Comprehensive Plan and is consistent with goals and polices of the Comprehensive Plan relating to these areas.
Discussion	Staff incorporated all of the suggestions submitted.

Version of criteria	Proposed Criteria Language
Criterion #2:	
07/14/08 PC & Staff	The Master Plan shall address the expansion or redevelopment of existing uses in the Master Plan Area.
Councilmember Eggen	The Master Plan shall address either (1) the expansion or redevelopment of existing uses in the Master Plan Area, (2) the needs identified in the Shoreline Economic Development Plan, or (3) the needs identified in the Housing Advisory Committee Report. In a Master Plan done under (3) above, the project may not include a density inconsistent with those allowed under the maximum land use designation of the surrounding neighborhoods.
Hillwood Neighborhood	The Master Plan shall address the expansion or redevelopment of existing uses in the Master Plan Area to include phasing of development over the period of the Master Plan Area requesting to be approved.
09/02/08 Revised Version	The Master Plan <u>Area</u> shall address the expansion or redevelopment of existing <u>and new</u> uses in the Master Plan Area <u>to include phasing of development over the period of the Master Plan Area requesting to be approved.</u>
Discussion	 Staff suggests: Clarifying that a Master Plan Area application can identify new uses on the site; and Incorporate the Hiillwood Neighborhood's suggested language regarding the need to include the phasing of development in the application. The inclusion of a phasing plan was assumed, but this addition to the criteria makes it clearer. Staff suggests that a new criterion be added to incorporate some of the ideas presented by Councilmember Eggen. The suggested new criteria would be: The Master Plan Area shall demonstrate how it implements or supports the City's approved strategies such as the Comprehensive Housing Strategy, Environmental Sustainability Strategy and Economic Development Strategy."
	Staff does not recommend adding language that limits density to the maximum allowed in the surrounding neighborhood. This provision is unclear. Does it mean that if the neighborhood contains R-48 zoning then the highest density on the site can be R-48? Or does it mean that if the property adjacent to the site is zoning R-6 the Master Planned Area may not exceed 6 units per acre? Staff suggests that the appropriate level of density in terms of transition between uses and on and off site impacts can be controlled using the proposed criteria in unison.

Version of criteria	Proposed Criteria Language
Criterion #3:	
07/14/08 PC & Staff	The Master Plan meets or exceeds the current regulations for Critical Areas if critical areas are present.
Councilmember Eggen	No changes proposed.
Hillwood Neighborhood	No changes proposed.
09/02/08 Revised Version	The Master Plan meets or exceeds the current regulations for Critical Areas if critical areas are present.
Discussion	No changes proposed.

Version of criteria	Proposed Criteria Language	
Criterion #4:		
07/14/08 PC & Staff	The proposed development demonstrates the use of innovative, aesthetic, energy efficient and environmentally sustainable architecture and site design.	
Councilmember Eggen	The proposed development demonstrates the uses of innovative, aesthetic, energy efficient and environmentally sustainable architecture and site design (including Low Impact Development stormwater systems and substantial tree retention) wherever practical.	
Hillwood Neighborhood	The proposed development demonstrates the use of innovative, aesthetic, energy efficient and environmentally sustainable architecture and site design that is compatible with the surrounding neighborhoods and to reduce impacts, to the extent possible to the surrounding neighborhoods.	
09/02/08 Revised Version	The proposed development demonstrates the use of innovative, aesthetic, energy efficient and environmentally sustainable architecture and site design (including Low Impact Development stormwater systems and substantial tree retention wherever practical) to reduce impacts, to the extent possible to the surrounding neighborhoods.	
Discussion	Staff incorporated all of the suggestions submitted.	

Version of criteria Proposed Criteria Language			
Criterion #5:			
07/14/08 PC & Staff	The Master Plan Area applicant demonstrates that there is either sufficient capacity in the transportation system (motorized and nonmotorized) to safely support the development proposed in all future phases or there will be adequate capacity by the time each phase of development is completed.		
Councilmember Eggen	The Master Plan Area applicant demonstrates that there is either sufficient capacity in the transportation system (motorized and nonmotorized) to safely support the development proposed in all future phases or there will be adequate capacity by the time each phase of development is completed. Any necessary increased capacity in infrastructure will be paid for by the Master Plan Area applicant.		
Hillwood Neighborhood	The Master Plan Area applicant demonstrates that there is either sufficient capacity in the transportation system (motorized and nonmotorized) to safely support the development proposed in all future phases or there will be adequate capacity by the time each phase of development is completed. The applicant must also demonstrate that there are sufficient transportation improvements to include curb, gutter, sidewalks, and bicycle lanes to safely support the transportation system.		
09/02/08 Revised Version	The Master Plan Area applicant demonstrates that there is either sufficient capacity and infrastructure (i.e. sidewalks, curbs, gutters, bike lanes) in the transportation system (motorized and nonmotorized) to safely support the development proposed in all future phases or there will be adequate capacity and infrastructure by the time each phase of development is completed. If capacity must be increased to support the proposed Master Plan Area, then funding sources for improvements must be identified as part of the plan.		
Discussion	Regarding Councilmember Eggen's comments: Staff agrees that if improvements to infrastructure are required to support the implementation of the Master Plan realistic funding plans need to accompany the proposals. Staff is suggesting to not stipulate that the applicant be required to pay for the improvement, although in most cases this will probably be the case. In some cases, there may be other funding partners. Regarding the Hillwood Neighborhood's comments: The ideas were incorporated.		

Version of criteria Proposed Criteria Language			
Criterion #6:			
07/14/08 PC & Staff	The Master Plan Area applicant demonstrates that there is either sufficient capacity within public services such as water, police, fire, sewer and stormwater to adequately serve the development proposal in all future phases, or there will be adequate capacity available by the time each phase of development is completed.		
Councilmember Eggen	The Master Plan Area applicant demonstrates that there is either sufficient capacity within public services such as water, police, fire, sewer and stormwater to adequately serve the development proposal in all future phases, or there will be adequate capacity available by the time each phase of development is completed. Any necessary increased capacity in infrastructure will be paid for by the Master Plan Area applicant.		
Hillwood Neighborhood	No changes proposed.		
09/02/08 Revised Version	The Master Plan Area applicant demonstrates that there is either sufficient capacity within public services such as water, police, fire, sewer and stormwater to adequately serve the development proposal in all future phases, or there will be adequate capacity available by the time each phase of development is completed. If capacity must be increased to support the proposed Master Plan Area, then funding sources for improvements must be identified as part of the plan.		
Discussion	Staff agrees that if improvements to infrastructure are required to support the implementation of the Master Plan realistic funding plans need to accompany the proposals. Staff is suggesting to not stipulate that the applicant be required to pay for the improvement, although in most cases this will probably be the case. In some cases, there may be other funding partners.		

Version of criteria	Proposed Criteria Language					
Criterion #7:						
07/14/08 PC & Staff	The Master Plan Area proposal contains design, landscaping, parking/traffic management and multi-modal transportation elements that minimize conflicts between the Master Plan property and adjacent uses.					
Councilmember Eggen	The Master Plan Area proposal contains design, landscaping, parking/traffic management and multi-modal transportation elements that minimize substantially eliminates conflicts between the Master Plan property and adjacent uses.					
Hillwood Neighborhood	The Master Plan Area proposal contains <u>architectural and site</u> design, landscaping, parking/traffic management and multimodal transportation elements that minimize conflicts between the Master Plan <u>Area</u> property and adjacent uses <u>neighborhoods</u> .					
09/02/08 Revised Version	The Master Plan Area proposal contains <u>architectural and site</u> design, landscaping, parking/traffic management and multimodal transportation elements that minimize conflicts between the Master Plan <u>Area</u> property and adjacent <u>uses areas</u> .					
Discussion	Although Councilmember Eggen's suggestion to replace "minimize" with "substantially eliminates" is a goal we would be striving for, it may not be possible to attain this level of compatibility. These sites contain uses that are different from surrounding uses. Many of these uses predate the surrounding development. Through careful and conscience planning for continued and future growth on these sites, we will be striving to eliminate conflicts. However, there may be circumstances where conflicts are lessened but not substantially eliminated AND this will still represent an improved situation for adjacent uses and neighborhoods.					
	The Hillwood Neighborhood group suggested replacing the word "uses" with "neighborhoods". Staff has suggested replacing "uses" with "areas". The reason being is that City has 15 recognized neighborhoods. These areas are large and often diverse within the defined area. It may be difficult to interpret what is compatible with a neighborhood verses the areas that surround the Master Planned Area properties. Area was chosen to replace uses to indicate that compatibility needs to extend beyond just adjacent uses.					

Version of criteria	Proposed Criteria Language
Criterion #8:	
07/14/08 PC & Staff	Development standards applicable to existing or allowed uses under the Development Code may be modified, or conditions imposed on development to avoid, reduce and then mitigate if they cannot be avoided or reduced all significant offsite impacts associated with the implementation of the Master Plan Area including but not limited to noise, shading, glare, surface water and traffic.
Councilmember Eggen	No changes proposed.
Hillwood Neighborhood	No changes proposed.
09/02/08 Revised Version	Development standards applicable to existing or allowed uses under the Development Code may be modified, or conditions imposed on development to avoid, reduce and then mitigate if they cannot be avoided or reduced all significant offsite impacts associated with the implementation of the Master Plan Area including but not limited to noise, shading, glare, surface water and traffic.
Discussion	No changes were proposed.

Version of criteria	Proposed Criteria Language		
Criterion #9:			
07/14/08 PC & Staff	Master Plan Area applications shall include a site development plan which will demonstrate compatibility with surrounding neighborhoods, including pedestrian and vehicle access and circulation, recreational and open spaces, building pads, critical areas and buffers, parking, landscaped areas and setbacks.		
Councilmember Eggen	Master Plan Area applications shall include a site development plan which will demonstrate <u>enhanced</u> compatibility with surrounding neighborhoods, including pedestrian and vehicle access and circulation, recreational and open spaces, building pads, critical areas and buffers, parking, landscaped areas and setbacks.		
Hillwood Neighborhood	No changes proposed.		
09/02/08 Revised Version	Master Plan Area applications shall include a site development plan which will-demonstrate how compatibility with surrounding neighborhoods and adjacent uses will be enhanced, including through site and architectural design for pedestrian and vehicle access and circulation, recreational and open spaces, building pads, critical areas and buffers, parking, landscaped areas and setbacks etc.		
Discussion	This criterion was not "hitting the mark". This criterion is aimed at ensuring that the transition between the neighborhood, adjacent uses and existing systems (transportation, open space, critical areas) are enhanced through Master Planning. The edits above are intended to clarify the intent.		

Additional Changes Suggested by the Hillwood Neighborhood Association

Comprehensive Plan

- Request: Add a new policy or addition to Land Use Policy 43 that would create
 a list of criteria that would need to be met if a property owner wanted the Council
 to designate their property as a Campus/Institution on the Comprehensive Plan
 Land Use map.
- Staff Response: There are only three sites that would currently have the Campus/Institution designation: Shoreline Community College, CRISTA and Fircrest. There is a process and criteria in place for processing changes to the Comprehensive Plan Land Use map. Changing the Comprehensive Plan Land Use map is an amendment to the Comprehensive Plan and is processed as a legislative action (see SMC 20.30.340). The decision criteria for amending the Comprehensive Plan, which includes the Comprehensive Plan Land Use map are as follows:
 - The amendment is consistent with the Growth Management Act and not inconsistent with the Countywide Planning Policies, and the other provisions of the Comprehensive Plan and City policies; or
 - The amendment addresses changing circumstances, changing community values, incorporates a sub area plan consistent with the Comprehensive Plan vision or corrects information contained in the Comprehensive Plan; or
 - The amendment will benefit the community as a whole, will not adversely affect community facilities, the public health, safety or general welfare.

Further, any request to change a land use designation to Campus/Institution would also have to meet the definition of a Campus/Institution.

Campus/Institution is proposed to be defined as "...a number of institutions within the community that serve a regional clientele on a large campus..." This definition greatly limits the number of sites that could be considered as an Institution/Campus.

Development Code

Request: In SMC 20.30.060, require that a notice of application for Master Plan Area permit be mailed to all residents and property owners within ½ mile of the proposed site instead of to just property owners within 500 feet of the site.

Staff Response: Public notice and input are an important part of the Master Plan Area process. Getting the information to those persons who would likely have an interest in these permits is a good idea. The notice could be sent to both the residents and property owners. To expand the noticing radius to a ½ mile from 500 feet would result in more than five times the postage, materials and labor costs. Staff does not recommend this part of the request. Many people within a ½ mile radius will not feel connected to the site. In addition, the City provides standard notice using: on site signage (note: we could require more signs, larger signs if sign visibility is an issue); and notice in the <u>Seattle Times</u>, <u>Enterprise</u> and City website. Notice for Master Plan Areas could be expanded to Currents and applicable neighborhood newsletters.

Request: Add to the proposed Master Plan Area purpose in 20.30.353 the following language:

The purpose of the Master Plan Area is to guide the growth and development of property designated as Institution/Campus or Essential Public Facilities in the Comprehensive Plan in order to serve its users and benefit the community by modifying zoning regulations that apply to the property to ensure that the proposed development or redevelopment of existing uses is compatible with the adjacent neighborhoods with regards to land uses, building height and scale and environmental preservation. With the exception of those uses and standards contained in this section, all other aspects of development, redevelopment or expansion will be regulated as prescribed in Title 20 and other applicable codes for all uses that are permitted outright or through conditional or special use processes in the underlying zones.

Staff Response: Staff recommends the following edits inspired by the request above: The purpose of the Master Plan Area is to guide the growth and development of property designated as Institution/Campus or Essential Public Facilities in the Comprehensive Plan in order to serve its users, promote compatibility with neighboring areas and benefit the community by modifying zoning regulations that apply to the property. With the exception of those uses and standards contained in this section, all other aspects of development, redevelopment or expansion will be regulated as prescribed in Title 20 and other applicable codes for all uses that are permitted outright or through conditional or special use processes in the underlying zones.

The purpose was originally proposed to mirror the language in the Comprehensive Plan. The edit shown in the staff response above addresses the concept that the Master Plan Areas are intended to address compatibility with neighboring uses, but is not as specific in how this is to be accomplished. The specificity on how to achieve compatibility is unique to each site.

Request: Add specific triggers for minor amendments of an approved Master Plan Area in 20.30.353 (C):

Amendments. Minor amendments to an approved Master Plan Area may be approved by the Director using criteria developed as part of the Master Plan Area. Minor amendments include any revision or modification of the previously approved Master Plan Area that would result in any one or more of the following:

- 1. An increase in 10 percent or more of the approved total building(s) square footage; or
- 2. An increase in 15 percent or more parking stalls by either creating new parking areas, re-striping of existing parking areas; and/or a combination of both; or
- 3. Removal of 5 or more Significant Trees; or
- 4. A change in the original phasing timeline of the Master Plan Area. Major amendments are changes that were not analyzed as part of an approved Master Plan Area. Major amendments to an approved Master Plan Area shall be processed as a new Master Plan Area.

Staff Response: The more specific triggers for what constitutes a minor amendment are a good addition to the proposed regulations. Staff recommends the following edits and additions to clarify the application of these triggers:

- 1. An increase in the square footage of any proposed building or structure by 10 percent or less; or
- 2. An increase of 15 percent or less in the number of new parking spaces, parking spaces created by re-striping existing parking areas and/or a combination of both; or
- 3. A change in the original phasing timeline of the Master Plan Area; or
- 4. Changes to building placement when located outside of the required setbacks and any required setbacks for critical areas; or
- 5. Other specific changes as noted in the Master Plan Area permit.

 Staff does not recommend using tree removal as a trigger for minor amendments. It is anticipated that removal of trees beyond that which is approved in the Master Plan permit will be subject to the regulations set forth in SMC 20.50 or that more specific regulations will be established for the site as part of the Master Plan Area permit.

Additional Changes Regarding New Uses

As discussed at the August 18th Council meeting. Staff is seeking Council clarification regarding whether or not a Master Plan Area may include new uses in addition to existing uses. The following edits to the text proposed in the July 14th Council staff report seek to clarify that new uses may be considered as part of a Master Plan Area permit:

Proposed definition for "Master Plan Area":

Master Plan Area

A site specific zoning district that establishes site specific permitted uses and development standards for an Institution/Campus or Essential Public Facility as defined in the Comprehensive Plan. Master Plan Areas incorporate proposed new development, redevelopment to include new uses and/or expansion of an existing development by public, private and/or non-profit entities.

- New policy after LU 43:
 - LU 43.1: It is recognized that areas designated as Institution/Campus may redevelop over time to include an expanded mix of public and private uses, including new residential, commercial and institutional development.
- Development Code, Section 20.30.353(A) Purpose:
 - A. Purpose. The purpose of the Master Plan Area is to guide the growth and development of property designated as Institution/Campus or Essential Public Facilities in the Comprehensive Plan in order to serve its users and benefit the community by modifying zoning regulations that apply to the property. Such growth and development may include the redevelopment of these sites to include new residential, commercial and institutional uses by public and private entities. With the exception of those uses and standards contained in this section, all other aspects of the development, redevelopment, or expansion will be regulated as prescribed in Title 20 and other applicable codes for all uses that are permitted outright or through conditional or special use processes in the underlying zones.

CONCLUSION

In conclusion, staff is asking Council to:

- 1. Provide direction on the final set of draft criteria for approving a Master Plan Area permit;
- 2. Clarify if Master Plan Area permits can include new uses in addition to existing uses; and
- 3. Provide staff with feedback on the request for changes proposed by the Hillwood Neighborhood Association and the staff responses to those requests.

Staff will use the direction provided tonight to finalize draft Ordinance No. 507 to adopt a process for Master Plan Area permits.

RECOMMENDATION

No action is required. Please provide staff with direction on:

- 4. The final set of draft criteria for approving a Master Plan Area permit;
- 5. Whether or not Master Plan Area permits can include new uses in addition to existing uses; and
- 6. The request for changes proposed by the Hillwood Neighborhood Association and the staff responses to those requests.

	(2)	
Approved By:	City Manager City Attorney	_

ATTACHMENTS

Attachment A Councilmember Eggen's Suggested Edits

Attachment B Hillwood Neighborhood Association Comment Letter 8/15/08

COUNCILMEMBER EGGEN'S SUGGESTED EDITS TO MASTER PLAN AREA CRITERIA

(NOTE: additions are shown as <u>underlined text</u> and deletions are shown in text boxes in the right margin).

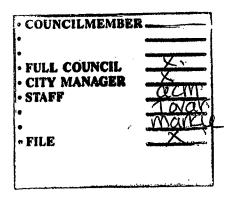
- B. Decision Criteria. A Master Plan Area shall be granted by the City, only if the applicant demonstrates that:
- 1. The project is designated as either Institutional/Campus or Essential Public Facilities in the Comprehensive Plan and is consistent with goals and polices of the Comprehensive Plan relating to these areas.
- 2. The Master Plan shall address <u>either (1)</u> the expansion or redevelopment of existing uses in the Master Plan Area, (2) the needs <u>identified in the Shoreline Economic Development Plan</u>, or (3) the needs <u>identified in the Housing Advisory Committee Report.</u> In a Master Plan done under (3) above, the project may not include a density inconsistent with those allowed under the maximum land use designation of the surrounding neighborhoods.
- 3. The Master Plan meets or exceeds the current regulations for Critical Areas if critical areas are present.
- 4. The proposed development demonstrates the uses of innovative, aesthetic, energy efficient and environmentally sustainable architecture and site design (including Low Impact Development stormwater systems and substantial tree retention) wherever practical.
- 5. The Master Plan Area applicant demonstrates that there is either sufficient capacity in the transportation system (motorized and nonmotorized) to safely support the development proposed in all future phases or there will be adequate capacity by the time each phase of development is completed. Any necessary increased capacity in infrastructure will be paid for by the Master Plan Area applicant.
- 6. The Master Plan Area applicant demonstrates that there is either sufficient capacity within public services such as water, police, fire, sewer and stormwater to adequately serve the development proposal in all future phases, or there will be adequate capacity available by the time each phase

of development is completed. Any necessary increased capacity in infrastructure will be paid for by the Master Plan Area applicant.

- 7. The Master Plan Area proposal contains design, landscaping, parking/traffic management and multi-modal transportation elements that minimize substantially eliminates conflicts between the Master Plan property and adjacent uses.
- 8. Development standards applicable to existing or allowed uses under the Development Code may be modified, or conditions imposed on development to avoid, reduce and then mitigate if they cannot be avoided or reduced all significant offsite impacts associated with the implementation of the Master Plan Area including but not limited to noise, shading, glare, surface water and traffic.
- 9. Master Plan Area applications shall include a site development plan which will demonstrate enhanced compatibility with surrounding neighborhoods, including pedestrian and vehicle access and circulation, recreational and open spaces, building pads, critical areas and buffers, parking, landscaped areas and setbacks.

August 15, 2008

Honorable Mayor Cindy Ryu & City Councilmembers
City of Shoreline
17544 Midvale Ave. N., Suite 100
Shoreline, WA 98133-4921



RE: Proposed Ordinance 507, Master Plan Area Permit Process

Honorable Mayor Ryu:

Thank you for allowing the Hillwood Neighborhood Association the opportunity to comment on the proposed Ordinance 507 establishing a review process for Master Planned Areas in the City of Shoreline. As residents of the Hillwood Neighborhood we appreciate the effort that the City Council and City staff has put into these proposed regulations. We understand that these regulations will regulate certain properties throughout the City of Shoreline; our main goal is to have regulations in place that will adequately address the future development of Crista Ministries. We understand that these proposed regulations are not intended to regulate or guide the development of a specific property, and that we will have the opportunity to comment on any application Crista makes at a future time. With our goal in mind, we offer the following recommended changes to the proposed Ordinance 507.

PROPOSED COMPREHENSIVE PLAN AMENDMENTS

(Exhibit B Page 146 Agenda Item 8(a) of July 14, 2008 Council Meeting)

LU43

We suggest a new policy or addition to this policy that would create a list of criteria that would need to be met if a property owner wanted you have their property designated Campus/Institution on the Comprehensive Plan Map. There are currently three properties with this designation; but what will limit the expansion of this designation to other properties throughout the city.

PROPOSED DEVELOPMENT CODE AMENDMENTS

Proposed changes are in <u>bold and underlined for new changes</u> and strikethrough for deletions. (Exhibit D Page 150 Agenda Item 8(a) of July 14, 2008 Council Meeting)

Table 20.30.060 - Summary of Type C Actions, Notice Requirements, Review Authority, Decision Making Authority, and Target Time Limits for Decisions.

Action	Notice Requirements for Application and Decision (5), (6)	Review Authority Open Record Public Hearing (1)	Decision Making Authority (Public Meeting)	Target Time Limits for Decisions	Section
Type C:				-	
9. Måster Plan Area	Mail, Post Site Newspaper (7)	PC (3)	City Council	120 Days	20.30.337

The proposed change is to require that a notice of application be mailed out to ALL residents AND property owners within ½ mile of the proposed site. There are two reasons for this:

- 1. Current code (SMC 20.30.120) only requires that property owners be notified, not residents if they are renters. A project of this scope should be required to notify tenants/residents of the properties as well.
- 2. If approved these amendments would currently impact only three properties within the City of Shoreline (Shoreline Community College, Fircrest and Crista). Because of the size of these projects that serve a "regional clientele on a large campus", it would be safe to assume that the City of Shoreline would want to notify as many residents as possible that would be impacted by these three properties. Increasing the notification radius from 500 feet to a half mile for three proposed sites is the **RIGHT** thing for the city to do to allow residents to comment on any proposal that may impact the region.

Proposed changes are in <u>bold and underlined for new changes</u> and <u>strikethrough for deletions</u>. (Exhibit D Pages 150-152 Agenda Item 8(a) of July 14, 2008 Council Meeting)

20.30.353 Master Plan Area

A. Purpose. The purpose of the Master Plan Area is to guide the growth and development of property designated as Institution/Campus or Essential Public Facilities in the Comprehensive Plan in order to serve its users and benefit the community by modifying zoning regulations that apply to the property to ensure that the proposed development or redevelopment of existing uses is compatible with the adjacent neighborhoods with regards to land uses, building height and scale and environmental preservation. With the exception of those uses and standards contained in this section, all other aspects of development, redevelopment or expansion will be regulated as prescribed in Title 20 and other applicable codes for all uses that are permitted outright or through conditional or special use processes in the underlying zones.

- **B. Decision Criteria.** A Master Plan Area shall be granted by the City, only if the applicant demonstrates that:
 - 1. The project is designated as either Institutional/Campus or Essential Public Facilities in the Comprehensive Plan and is consistent with goals and polices of the Comprehensive Plan relating to these areas.
 - 2. The Master Plan shall address the expansion or redevelopment of existing uses in the Master Plan Area to include phasing of development over the period of the Master Plan Area requesting to be approved.
 - 3. The Master Plan meets or exceeds the current regulations for Critical Areas if critical areas are present.
 - 4. The proposed development demonstrates the use of innovative, aesthetic, energy efficient and environmentally sustainable architecture and site design that is compatible with the surrounding neighborhoods and to reduce impacts, to the extent possible, to the surrounding neighborhoods.
 - 5. The Master Plan Area applicant demonstrates that there is either sufficient capacity in the transportation system (motorized and nonmotorized) to safely support the development proposed in all future phases or there will be adequate capacity by the time each phase of development is completed. The applicant must also demonstrate that

there are sufficient transportation improvements, to include curb, gutter, sidewalks, and bicycle lanes to safely support the transportation system.

6. The Master Plan Area applicant demonstrates that there is either sufficient capacity within public services such as water, police, fire, sewer and stormwater to adequately serve the development proposal in all future phases, or there will be adequate capacity available by the time each phase of development is completed.

7. The Master Plan Area proposal contains <u>architectural and site</u> design, landscaping, parking/traffic management and multi-modal transportation elements that minimize conflicts between the Master Plan <u>Area</u> property and adjacent uses <u>neighborhoods</u>.

- 8. Development standards applicable to existing or allowed uses under the Development Code may be modified, or conditions imposed on development to avoid, reduce and then mitigate if they cannot be avoided or reduced all significant offsite impacts associated with the implementation of the Master Plan Area including but not limited to noise, shading, glare, surface water and traffic.
- 9. Master Plan Area applications shall include a site development plan which will demonstrate compatibility with surrounding neighborhoods, including pedestrian and vehicle access and circulation, recreational and open spaces, building pads, critical areas and buffers, parking, landscaped areas and setbacks.

C. Amendments. Minor amendments to an approved Master Plan Area may be approved by the Director using criteria developed as part of the Master Plan Area. Minor amendments include any revision or modification of the previously approved Master Plan Area that would result in any one or more of the following:

- 1. An increases in 10 percent or more of the approved total building(s) square footage; or
- 2. An increase in 15 percent or more parking stalls by either creating new parking areas, re-striping of existing parking areas; and/or a combination of both; or
- 3. Removal of 5 or more Significant Trees; or
- 4. A change in the original phasing timeline of the Master Plan Area.

Major amendments are changes that were not analyzed as part an approved Master Plan Area. Major amendments to an approved Master Plan Area shall be processed as a new Master Plan Area.

We feel that the proposed changes to the Development Code will assist in resolving the concerns of the residents of the Hillwood Neighborhood, which in summary are the following:

- 1. Provide ample public notice to both residents and property owners beyond the standard 500 feet. The impacts created by these regional facilities go beyond the approximate block radius currently required to be notified.
- 2. Preserve existing neighborhood character; whether it is the built or natural environment.
- 3. Provide adequate mitigation for impacts dealing with traffic, parking, sound, environment, view, as well as others.
- 4. Allow neighborhood input on development that will impact them directly.

Thank you again, for taking the time to consider these changes to the Master Plan Area Review process. Members of our Association are willing to meet with city staff to discuss these proposed changes and we will be in attendance at the City Council meeting of September 2, 208 to discuss these changes as well.

Sincerely,

Hillwood Neighborhood Association

Lee Michaelis, Chair

Cc: Joseph W. Tovar, FAICP Director of Planning and Development Services
Rachael Markle, Project Manager Assistant Director of Planning and Development Services
Ann Erickson, Vice-Chair Hillwood Neighborhood Association
Anna Marchini, Secretary Hillwood Neighborhood Association

Council Meeting Date: September 2, 2008 Agenda Item: 6(b)

CITY COUNCIL AGENDA ITEM

CITY OF SHORELINE, WASHINGTON

AGENDA TITLE: Thornton Creek Basin Flood Plain Mapping

DEPARTMENT: Public Works

PRESENTED BY: Mark Relph, Public Works Director

Jesus Sanchez, Public Works Operations Manager Tricia Juhnke, PW Capital Projects Administrator

PROBLEM/ISSUE STATEMENT:

The City has been pursuing a series of storm water improvements throughout the city since its incorporation in 1995. The Thornton Creek/Ronald Bog Basin has been the subject of many of these improvements. This report, and staff's presentation on September 2nd, will review what the city has accomplished of our current Capital Improvement Program (CIP) for 2008, flood plain mapping now underway, Federal Emergency Management Agency (FEMA) involvement, and our strategies for the basin.

The residential area south of Ronald Bog is part of the much larger Thornton Creek drainage basin (attachment A). This basin drains through Shoreline and into the City of Seattle before it eventually outfalls to Lake Washington. Ronald Bog itself has historically flooded during significant rain events greater than a 50 year storm. Most recently this neighborhood was severely flooded during the December 3rd rain event which was an event greater than a 100 year storm event.

The City has pursued solutions since the flooding of many homes during a large rain-on-snow storm event that occurred in early 1997. Currently there is a \$3.1 million CIP project under construction utilizing primarily Public Works Trust Fund Loans. The first step, currently under construction, will replace the 3 restrictive culverts west of Corliss Place with fish passable boxes (attachment B). Work on the street drainage on the west side of Corliss Ave N, between 171st and 172nd, will be completed in the fall. Replacing failing infrastructure through these changes will assist in mitigating some degree of flooding, but it is not the complete solution for alleviating flooding in the Ronald Bog area.

Also underway is a joint effort with the City of Seattle to map the flood zones along Thornton Creek. This is a first step to completing a comprehensive basin plan. The completed mapping can be submitted to FEMA as a request to revise their flood zone maps. Once FEMA accepts the base flood elevations and flood risk zones, the City of Shoreline will have 6 months to adopt base flood elevations and reflect changes in the zoning and building code. FEMA designation as a flood zone improves our opportunity for federal funds to alleviate flooding, but it also carries a requirement for property

owners, with federally backed mortgages, to purchase insurance. Flood insurance will cost a typical home owner between \$300 and \$400 per year. Flood insurance rates will be higher and building requirements more stringent for new construction within higher risk flood zones. Existing structures will pay the same rate for insurance as they would before changes to flood mapping, but the owners will be required to document that their home existed before the change.

The flood plain mapping will be complete by the fall. At that point, we will begin evaluation of FEMA funding opportunities, along with coordination of the changes to existing city code. The final mapping, funding expectations and code revisions will be presented to council prior to submitting the mapping revisions to FEMA.

Finally, a study is now underway to fully model the entire basin, and evaluate the effectiveness of proposed improvements. This "basin plan" will allow the city to have a complete understanding of the projects necessary for maximum flood protection, plus allow the City to develop a more strategic approach to funding, including surface water rate structure and grant opportunities. The basin plan is scheduled for completion in the first quarter of 2009.

FINANCIAL IMPACT:

The 2008 – 2013 adopted CIP budget includes four significant projects with the basin that are intended to address the storm water problem. They include the \$3.1M Ronald Bog South project (under construction), the \$747,000 Cromwell Park Improvement Project (construction of 1 to 2 acre-feet of upstream detention in 2009), the \$264,000 Pump Station No.25 and the \$571,000 Ronald Bog Park Detention/Wetland Project. However, additional projects beyond the current CIP will be needed to at least provide the residents south of the Bog some reasonable level of flood protection.

Within the "Discussion" section of this report, there is a funding section that proposes how the city may approach completing the basin plan and the pursuit of other financial opportunities to complete a more detailed and comprehensive project approach for this basin.

RECOMMENDATION

No action is require	d by the City Council at this time.	This report is for information only.
Approved By:	City Manager City Attorney	У

INTRODUCTION

On December 3rd, 2007, a rain storm dropped more than 4 inches of rainfall in about 21 hours on the City and Public Works crews responded to hundreds of calls from residents. This rainfall amount exceeded the 100-year storm, and thereby exceeded the design capacity of the stormwater infrastructure. The volume of runoff from this storm entering Ronald Bog was more than 20 acre-feet above flood stage. Consequently, flooding occurred in the residential area south of Ronald Bog. These homes were flooded with up to 3 feet of water for a second time in 11 years.

The City has pursued solutions to flooding since incorporation, and the Ronald Bog area has been a significant portion of the list. Currently, the City has a 2008 CIP project for improvements to the drainage totaling \$3,100,000. If these improvements had been implemented prior to December 3rd, it would not have eliminated the flooding that occurred in December. An additional \$3,000,000 in improvements, proposed as part of the 30% design and subsequently dropped due to budget, may have added further protection immediately South of Ronald Bog, but would more likely have caused additional flooding further downstream.

Public Works has prepared an action plan with immediate, near term, and long term approaches aimed at working within available and foreseeable funding to provide the greatest relief to this area. Part of the proposed strategy is the pursuit of grants. If the City is successful, then the completion of projects could be accelerated.

BACKGROUND

Early accounts of Shoreline tell how Native Americans collected wild cranberries at Ronald Bog. Named after Judge James Ronald, an early Shoreline philanthropist and Seattle mayor from 1892-93, Ronald Bog was historically a peat bog wetland. In 1923, the US Geological Survey estimated Ronald Bog peat deposits to be 40 feet deep over 25 acres. After World War II, George Webster obtained ownership of the land and it was mined for its peat, forming the square sided shape open water pond that is seen today.

The neighborhood to the south of present day Ronald Bog Park was originally part of the Bog. The area was platted for residential use by King County in 1955 and homes were built on fill not long afterwards. Construction of Interstate 5 began in the area in the early 1960's and fill from the construction was used to reduce the open water portion of the Bog. Runoff from development since then in the 690 acres upstream has been directed to the Bog since it is the low spot in the Upper Thornton Creek basin. Sometime after it began being used as a regional stormwater facility, the Bog was directly connected to Thornton Creek (Bogs are usually isolated and are only connected to other surface waters through groundwater flow).

The studies completed subsequent to the 1997 flood were conventional in design, and did not address the downstream effects, including backwater. None of the studies

account for the movement and impact of groundwater. It is clear from the event in December that maintenance completed on the drainage system has significantly restored the flow capacity of the system, but has had little impact on significant flooding events. This is a strong indication that simply building a bigger pipe or a wide open channel is not the entire solution to the flooding in the Ronald Bog area. A basin-wide study, from headwaters to the south city limit, is needed to fully assess the proposed solutions. This study may likely need to include backwater-and groundwater analysis of properties beyond the City limits.

In 2005, the city adopted its first Surface Water Master Plan. This Plan was in part an attempt to identify the significant basins within the city and then prioritize a list of projects addressing the history of known problems. This Plan was <u>not</u> a complete listing of all projects within the city that are going to be necessary to reduce flooding. This Plan does <u>not</u> provide a detailed correlation between the level of flood protection required and the magnitude of improvements. More specifically, the Plan states that additional engineering analysis will be required to properly determine the appropriate level of infrastructure given the desired level of flood protection¹.

The initial Ronald Bog Drainage Improvement Project was created by the City in response to the flooding of many homes during a large rain-on-snow storm event that occurred in early 1997. Attachment C provides a detailed chronology of events that surround Ronald Bog area.

DISCUSSION

As the threat of flooding continues, an immediate action plan is appropriate and measures have already been taken. The City has begun construction this summer on projects that will start to reduce the level of flooding. It is clear that more work beyond what is planned will be needed to resolve the issue. The City's response to the flooding issue has been divided into a three pronged approach:

- 1. Immediate Action
- 2. Near term construction
- 3. Long Term study and plan implementation
- 1. Immediate Action Plan: This includes installation of an early warning system to alert residents to the pending flooding. The City has placed sand bags at strategic locations and has an ongoing training plan for neighborhood response. A 6" pump will be located at the south end of Corliss Ave N to serve as a high-flow bypass on an as needed basis. Maintenance continues on the existing system downstream of the Bog to keep it free flowing. Staff has identified potential grant opportunities and will pursue applications including:
 - King County Flood Control Zone District "Opportunity Fund"
 - FEMA Disaster Mitigation grant
 - FEMA Pre-Disaster Hazard Mitigation Grant.

¹ Surface Water Master Plan, Adopted July 11, 2005; Section 5.3 - Proposed Flood Protection Projects and Programs.

- Other State and Federal alternatives
- 2. Near Term Plan: This will continue with the replacement of the street drainage system along the west side of Corliss Avenue North. The existing system is in need of replacement and a new pipe will increase the effectiveness of the bypass pump. The replacement of the fish barriers on Thornton Creek, west of Corliss Place, will also reduce the likelihood that these will become debris barriers.

The maintenance of the downstream system and the elimination of the fish barriers are aimed at returning the Bog to its historic levels; about 2 feet lower than present. This could add as much as 5 acre-feet of storage at the Bog. Lowering areas within Ronald Bog Park could add an additional 5 acre-feet.

The design and construction of Cromwell Park improvements, scheduled to be completed in 2009, will include 1 to 2 acre-feet of upstream detention and will reduce flooding at Ronald Bog by that amount.

FEMA FLOOD PLAIN MAPPING. Shoreline is working in cooperation with the City of Seattle to map the flood zones along Thornton Creek. Once complete, the mapping will be evaluated against funding opportunities and requirements for changes to existing city code. The final mapping, funding expectations and code revisions will be presented to council prior to submitting the mapping revisions to FEMA.

3. Long-Term Plan: There exists a very shallow or limited hydraulic profile (2 feet of fall from the Bog to N 168th Street), which necessitates a detailed downstream evaluation and analysis; as does any solution that involves more pipe capacity. These dynamic factors have not been studied with the conventional modeling that has been completed.

The scope of the study will need to reach beyond this localized area and will require a look at all of Thornton Creek from the headwaters to the City Limit; and beyond as necessary for analysis. The Long Term Plan will need to analyze and evaluate a variety of alternatives and solutions including:

- Increasing Upstream detention
- Diversion of water away from Ronald Bog
- Terracing the Ronald Bog Park to store more water in the park area
- Additional detention facilities and acquisition of property
- Improving & increasing conveyance capacity of the downstream system
- Identify Grant Funding Opportunities and requirements including the FEMA Pre-Disaster and Hazard Mitigation Programs.
- Evaluate the Surface Water Rate Structure to help fund solutions

This proposed "basin plan" will allow the city to have complete understanding the projects necessary for maximum flood protection, plus allow the city to develop a more strategic approach to funding, including surface water rate structure and grant opportunities. The basin plan is scheduled for completion in the first quarter of 2009.

Funding

The following table shows the current funding that is available based on the 2008-2013 Capital Improvement Plan (CIP) for the Thornton Creek/Ronald Bog Basin.

Project	Scheduled Year(s)	Surface Water Funded	Public Works Trust Fund Loan	Total Amount
Ronald Bog South	2008	\$416,910	\$2,052,090	\$2,469,000
Ronald Bog Park Wetland	2009-2010	\$571,000		\$571,000
Cromwell Park Pond/Wet Pond/Wetland	2008-2009	\$747,000		\$747,000
Pump Station No. 25	2009	\$264,000	,	\$264,000
Total		\$1,998,910	\$2,052,090	\$4,051,000

Fundamentally, in developing long range planning for addressing flooding, water quality and habitat enhancements, one needs to understand the hydrologic behavior of the entire basin. To accomplish this, a quality master basin plan that will help guide the city in developing quality CIP projects with reasonably predictable costs will be developed. This will assist the City in understanding exactly what we can afford and where surface water rates need to be based on priorities developed on a basin-by-basin basis.

The ultimate goal is to provide the maximum flood protection possible to the residents directly south of the Bog, to those adjacent to Pump Station 25 on 2nd Place NE, to all residents upstream of the Bog who were impacted on December 3rd, and to the downstream residents in Shoreline and our neighbors in Seattle. This needs to be accomplished in accordance with all environmental requirements and within reasonable budgetary constraints.

RECOMMENDATION

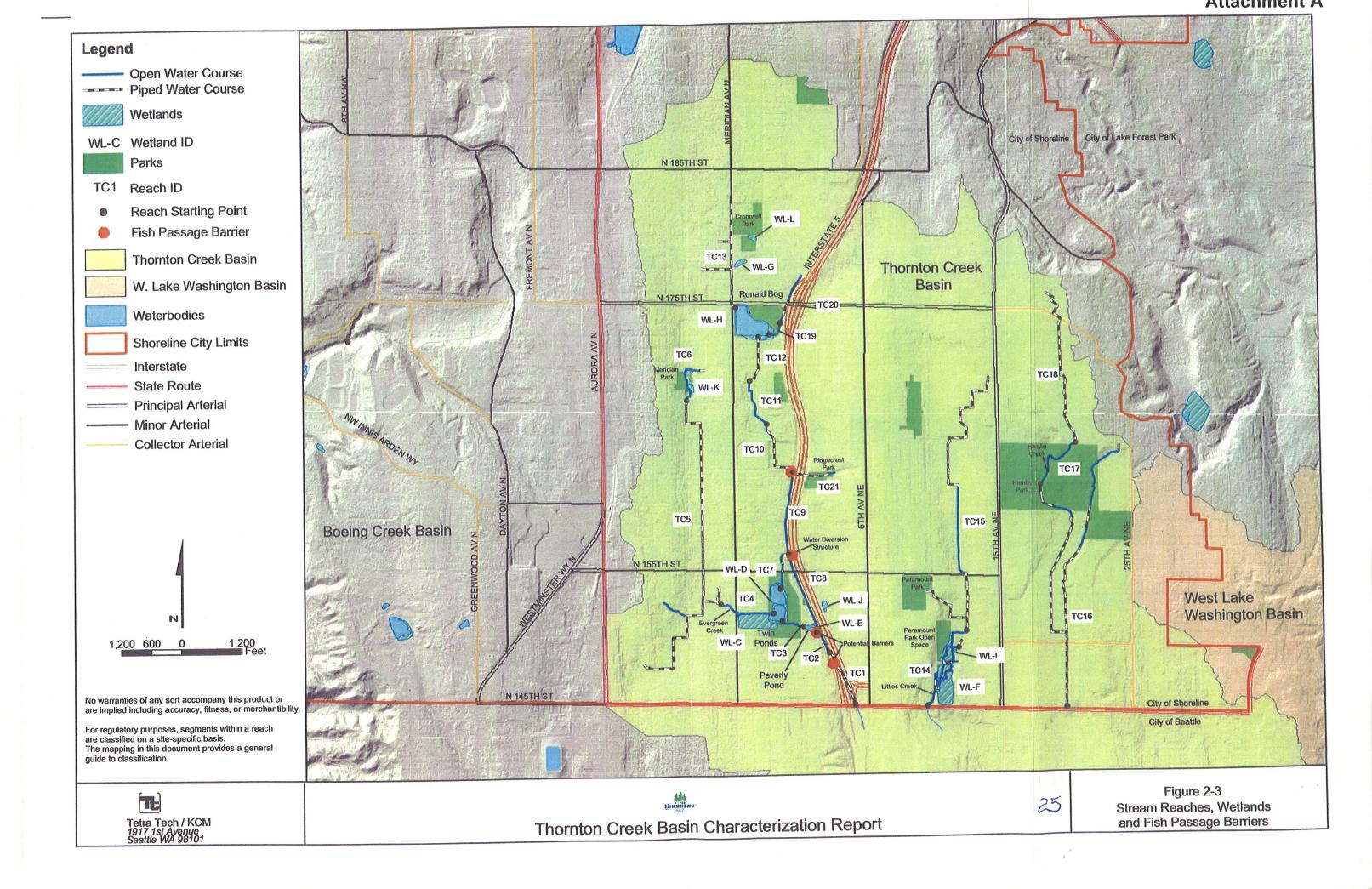
No action is required by the City Council at this time. This report is for information only.

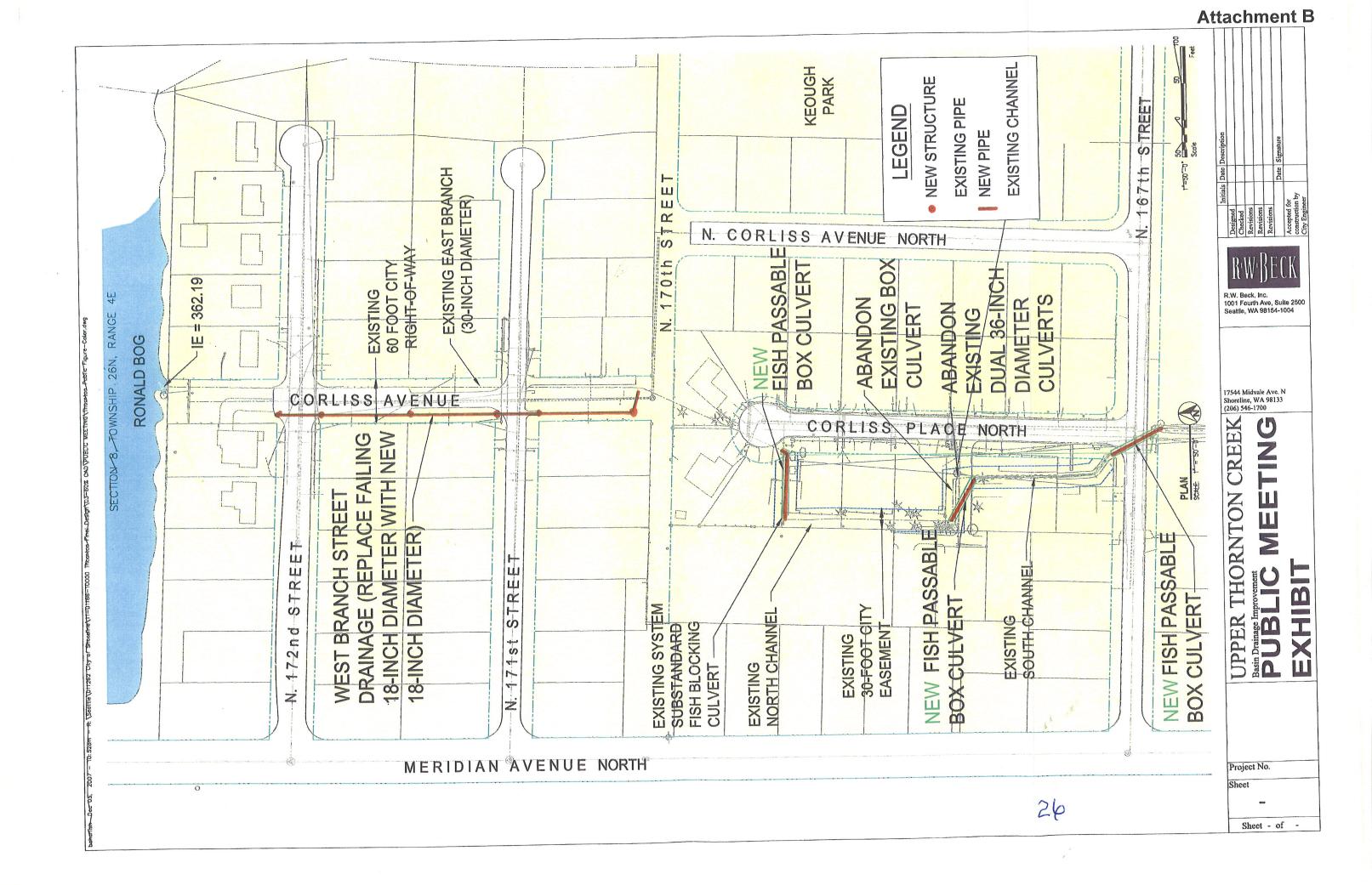
Attachments:

Attachment A – Thornton Creek Drainage Basin

Attachment B - The 2008 CIP project of Ronald Bog South

Attachment C – A Chronology of Events within the Thornton Creek/Ronald Bog Drainage Basin





<u>Attachment C</u> - A Chronology of Events within the Thornton Creek/Ronald Bog Drainage Basin.

- November 1998 The City Council adopts City's first Capital Improvement Plan (CIP). This CIP includes three separate drainage projects within the Ronald Bog Drainage basin.
- June 1999 Staff presents to Council the steps for the Ronald Bog project predesign study titled the "Ronald Bog Subbasin Study." Council approves combining the three previously mentioned CIP projects into one. This Council agenda item authorized the City to hire Otak for a basin solutions analysis.
- Staff works with Technical and Citizen Advisory Committee (CAC) to review subbasin flooding options. Staff meets with citizen and technical advisory committees (Residents, the Departments of Ecology, Transportation, and Fish and Wildlife, and the Army Corps of Engineers) to discuss technical and citizen concerns at same time. This advisory committee meets on June 20, August 1, and October 5, 2000. The final CAC met on January 11, 2001.
- February 2001 Staff requests Council select a combination of projects as the basin-wide preferred alternative based a document completed by Otak entitled "Ronald Bog Drainage Improvements Phase 1, Thornton Creek Tributary Flood Reduction Study." These basin-wide alternatives include two projects east of I-5 (upgrades to pump station 25 and drainage improvements near 10th Ave NE and Serpentine Place NE), two in Cromwell Park, one in Ronald Bog Park, and one downstream of the Bog.
- June 2001 –Council adopts the preferred basin-wide alternative and authorizes staff to move forward with the design and environmental work. Staff negotiates with Otak to begin 30% design and environmental permitting.
- Early 2002 Former Shoreline City Manager Steve Burkett calls for independent review of Ronald Bog Drainage Improvements Project as well as four other large CIP projects. The 30% design and environmental permitting is stopped while independent review completed.
- Fall 2002 Following the recommendations of the independent review by Gray & Osborn, the project is broken up into short term and long-term improvements by the Council during 2003-2008 CIP process. Short term improvements for 2003 included:
 - Cleaning/video of pipes and removal of roots in storm lines south of Ronald Bog, and at 10th NE/175th Street (completed in 2003).
 - Full design, permitting, and construction of the Serpentine Place improvements (see below).
- December 2002 The City completes drainage improvements upstream of Ronald Bog along 1st Ave NE near NE 185th St to detain flows prior to reaching the Bog (oversized storm pipe with some in-line detention).
- March 2003 The City begins the process of developing a Surface Water Master Plan that will include a discussion of which of the other Ronald Bog drainage improvements are appropriate.

- April 2003 City decides that it is appropriate to construct the following "early outs" instead of the entire Serpentine Project. The two pieces of storm line to be constructed as early out improvements include: 175th Street (between 10th and 11th Avenues NE) and north on 10th Avenue from 175th Street to catch grade AND Serpentine Avenue from 5th Avenue NE west to 175th Street (this is a portion of the original Serpentine Project). These projects were completed in Mach of 2004 at a cost of \$1,100,000.
- Spring 2004 City begins stepped up annual maintenance schedule for all pipe and catch basins in the Ronald Bog basin. All pipes are cleaned, root cut, and catch basins vacuumed out. This extends the useful life of the pipes.
- November 2004 Additional drainage improvements are constructed by the City in the area of 10th Ave NE and NE 175th St. \$75,000.
- Late 2004 WSDOT completes construction of detention/water quality pond at intersection of I-5 and N 175th St. that may helps flows entering Ronald Bog.
- Summer 2005 Council approves the first citywide Surface Water Master Plan
 that adopts the projects suggested in the 2001 "Ronald Bog Drainage
 Improvements Phase 1, Thornton Creek Tributary Flood Reduction Study," with
 modifications. These projects are priority level 1 and scheduled to be completed
 during the first 6 years of the plan. The study also recommends further survey,
 hydrologic analysis, and hydraulic analysis be completed.
 The Surface Water Master Plan did not contain detailed basin modeling. The
 - The Surface Water Master Plan did not contain detailed basin modeling. The prioritization of projects was based on know flooding, water quality and habitat problem areas from resident and business service requests.
- Early 2006 City initiates design contract to design the portion of the Ronald Bog Drainage Improvements from the outlet from the Bog to N 167th St (Ronald Bog South Project).
- May 2006 Parks bond measure passes that includes master plan for Cromwell Park. Ronald Bog Drainage Improvements that include Cromwell are integrated into the Parks Master Plan for Cromwell.
- November 2006 Public Meeting held for preliminary design of Ronald Bog South Project.
- December 2006 30% design for Ronald Bog South Project is completed.
- January 2007 The 30% plan is presented to Council.
- Spring 2007 Washington Department of Fish & Wildlife insists on either an open channel or fish-passable box culverts from the Bog outlet to the open channel. The cost of this is far in excess of available resources (doubled the costs) and this approach would have increased downstream flows substantially South of the Bog and into the City of Seattle. This result was deemed unacceptable by Staff. A phased approach for completing the downstream portion of the project is currently underway.
- The rain event of December 3, 2007 provided significant insight into how the Bog functions. In early November 2006, a 50-year storm dropped 3.7 inches of rain on the City. The weather was relatively dry prior to this event and flooding downstream of the Bog did not occur. The December 3rd event was just over 4 inches with a snow and small rain event preceding it and this resulted in over 20 acre-feet of surface water over and around Ronald Bog beyond the capacity of

the system. This volume estimate does not include the high ground water that continued to recharge the flooded areas as the water was pumped and subsequently receded. This new information warrants re-looking at alternatives and solutions to include the groundwater contribution component.